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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/815,812	04/02/2004	John David Sosnowski	29250-001093/US	9378

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EXAMINER

SWERDLOW, DANIEL

ART UNIT	PAPER NUMBER
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2615

DATE MAILED: 05/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/815,812	Applicant(s) SOSNOWSKI ET AL.	
	Examiner Daniel Swerdlow	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 March 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 13-18 and 20-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11, 13-18 and 20-26 is/are rejected.
- 7) ☒ Claim(s) 22 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. **Claims 22 and 23 are objected to under 37 CFR 1.75(c)**, as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 21 is drawn to a device for protecting against transient damage. Claims 22 and 23 are directed solely to details of an arrangement in which the device is disposed. As such, the limitations on the arrangement in which the device is disposed do not limit the device itself and the dependent claims are not further limiting.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. **Claims 1 through 11, 13 through 18 and 20 through 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen in view of Fujiwara et al (US 2004/0228060 A1).**
4. Regarding Claim 1, Cohen discloses remote line powering (i.e., transmitting electric power from a power source to a remote load) (column 1, lines 47-57) via telecommunication line pairs (i.e., telephone twisted pair) comprising: supplying electric power via a plurality of line pairs (i.e., transmitting from the power source a plurality of electric power feeds over a plurality of twisted pairs) (column 1, lines 49-51) with each power feed using a maximum voltage of 320 VDC and a maximum current of 60 mA (column 2, lines 10-12) (i.e., $320 \times 0.060 = 19.2$ watts);

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generating at each of a plurality of separate (i.e., independent) power supervisor, controller and power stage converter arrangements (Fig. 1, reference 30, 35, 40; column 4, lines 7-38) that correspond to the power converters claimed and each output voltage associated with a single line pair (i.e., based on receipt of a given power feed from a corresponding twisted pair); and aggregating (i.e., combining) the output voltages to provide an aggregate output voltage (column 4, lines 40-43) to provide power for an appliance (column 3, lines 62-66) that corresponds to the downstream remote load claimed. Therefore, Cohen discloses all elements of except transient protection. Fujiwara discloses a telephone interface protection circuit that protects electronic equipment from transient events on subscriber telephone lines [0002]. Fujiwara further discloses that such an arrangement provides reliable protection from lightning surges and power line bridging [0006]. It would have been obvious to one skilled in the art at the time of the invention to apply a protection circuit taught by Fujiwara to the power system taught by Cohen for the purpose of realizing the aforesaid advantages.

5. Regarding Claim 2, as shown above apropos of Claim 1, Cohen discloses limiting current on a given wire pair to 60 mA, which given the maximum voltage of 320 VAC disclosed does not exceed a feed power of 100 watts.

6. Regarding Claim 3, as shown above apropos of Claim 1, Cohen discloses supplying electric power via a plurality of line pairs (i.e., transmitting from the power source a plurality of electric power feeds over a plurality of twisted pairs) (column 1, lines 49-51) and generating at each of a plurality of separate (i.e., independent) power supervisor, controller and power stage converter arrangements (Fig. 1, reference 30, 35, 40; column 4, lines 7-38) that correspond to the

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power converters claimed and each output voltage associated with a single line pair (i.e., received over a single twisted pair).

7. Regarding Claim 4, Fujiwara further discloses the protection circuit comprising only a positive temperature coefficient thermistor and a voltage limiting element (Fig. 1, reference PTC, ZNR [0020]). Fujiwara further discloses that such an arrangement provides protection at low cost [0014]. It would have been obvious to one skilled in the art at the time of the invention to apply the thermistor and a voltage limiting element protection circuit taught by Fujiwara to the combination made obvious by Cohen and Fujiwara for the purpose of realizing the aforesaid advantages.

8. Regarding Claim 5, Fujiwara further discloses the circuit resets itself when the triggering event ceases (i.e., momentarily interrupting and reconnecting after the transient has passed) [0024].

9. Regarding Claim 6, Cohen further discloses compensating for failure on a pair by drawing additional power over remaining pairs (i.e., the effects of a transient do not reflect in an interruption of power to the load) (column 5, lines 39-42).

10. Regarding Claim 7, Cohen further discloses on startup, waiting for the apparatus to identify itself (i.e., delaying enabling of a low-voltage output) so that electrical power is conveyed at the steady state after the apparatus has been verified (i.e., to synchronize the plurality of independent remote power converters at the load) (column 4, lines 58-65).

11. Regarding Claim 8, Cohen further discloses delaying until verification that the apparatus terminates the line pairs (i.e., is a function of loading presented by the load) (column 4, lines 60-63).

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12. Regarding Claim 9, as shown above apropos of Claim 1 Cohen discloses a power feed per wire pair of 19.2 watts. Cohen further discloses aggregation of power from 16 wire pairs (column 5, lines 55-58). As such, Cohen discloses delivering a power of $19.2 \times 16 = 306$ watts.

13. Claim 10 is essentially similar to Claim 1 and is rejected on the same grounds.

14. Regarding Claim 11, Cohen further discloses drawing additional power only if doing so would not breach safety parameters (column 5, lines 42-45). This inherently teaches a power limiter. Further as applicant admits in paragraph [0010] of the disclosure, a power feed of 100 watts would breach safety parameters.

15. Regarding Claim 13, Fujiwara further discloses the circuit comprising only a positive temperature coefficient thermistor and a voltage limiting element (i.e., without a fuse or voltage controlled shorting switch) (Fig. 1, reference PTC, ZNR [0020]).

16. Regarding Claim 14, Fujiwara further discloses the positive temperature coefficient thermistor is in series with the line pair (Fig. 1, reference PTC) and resets itself when the triggering event ceases (i.e., momentarily interrupting and reconnecting after the transient has passed) [0024].

17. Regarding Claim 15, as shown above apropos of Claim 1 Cohen discloses a power feed per wire pair of 19.2 watts. Cohen further discloses aggregation of power from 16 wire pairs (column 5, lines 55-58). As such, Cohen discloses delivering a power of $19.2 \times 16 = 306$ watts.

18. Claim 16, in addition to the elements cited above apropos of Claims 1 and 7, Cohen further discloses delay until the apparatus presents a signature on the line pairs (column 4, lines 58-65). Cohen further discloses input path capacitors (Fig. 1, reference 40). As such, the delay for signature presentation inherently depends on the size of the capacitor.

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19. Regarding Claim 17, in addition to the elements cited above apropos of Claim 7, including the elements of its base claim, Claim 1, Cohen further discloses delay until the apparatus presents a signature on the line pairs (column 4, lines 58-65). Cohen further discloses input path capacitors (Fig. 1, reference 40). As such, the delay for signature presentation inherently depends on the size of the capacitor.

20. Regarding Claim 18, Cohen further discloses delay until the apparatus presents a signature on the line pairs (i.e., at least one threshold) (column 4, lines 58-65).

21. Claim 20 is essentially similar to Claim 7, including the elements of its base claim, Claim 1, and is rejected on the same grounds.

22. Claim 21 is essentially similar to Claim 5, including the elements of its base and intervening claims, Claims 1 and 4, and is rejected on the same grounds.

23. Claims 22 and 23 are not further limiting on Claim 21 for reasons stated above under Claim Objections. As such, Claims 22 and 23 are rejected on the same grounds as Claim 21.

24. Claim 24 is essentially similar to Claim 11, including the elements of its base claim, Claim 10, and is rejected on the same grounds.

25. Claim 25 is essentially similar to Claim 10, and is rejected on the same grounds.

26. Regarding Claim 26, as shown above apropos of Claim 1 Cohen discloses a power feed per wire pair of 19.2 watts. Cohen further discloses aggregation of power from 16 wire pairs (column 5, lines 55-58). As such, Cohen discloses delivering a power of $19.2 \times 16 = 306$ watts.

Response to Arguments

27. Applicant's arguments filed 2 March 2006 have been fully considered but they are not persuasive.

28. In the last paragraph on page 9 of the response filed on 2 March 2006, applicant alleges that Claims 22 and 23 further limit the invention of Claim 21. Examiner respectfully disagrees. Claim 21 is directed to a device for protecting against transient damage. As such, limitations directed to the arrangement in which the device is used are further limiting only to the extent that they further limit the structure of the device itself. In this case, there is no such further limitation.

29. In the second complete paragraph on page 11 of the response, applicant alleges that Cohen fails to teach a delay that is a function of a size of an energy storage capacitor in an input path to a given power converter as claimed in claims 16, 17, 20 and 25. Examiner respectfully disagrees. As stated in the rejections above, Cohen discloses a delay until the apparatus presents a signature on the line pairs in response to a low voltage application (column 4, lines 58-65). Cohen further discloses input path capacitors shunted across the line (Fig. 1, reference 40). As such, the low voltage level required to trigger the signature response is delayed while the capacitor charges. This delay for signature presentation inherently depends on the size of the capacitor since the time required for a capacitor to charge to a given voltage depends on the capacitance value.

30. In the paragraph spanning pages 12 and 13 of the response, applicant alleges that the cited references fail to teach protecting a power source. Examiner respectfully disagrees. In response to applicant's arguments against the references individually, one cannot show

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nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, the power source is clearly taught by Cohen while Fujiwara teaches the protection of equipment attached to a telephone line from mishaps related to the line. One skilled in the art would have known that such protection is equally applicable to power sourcing equipment as power using equipment. Further, the protection of power using equipment from overcurrent conditions inherently protects the associated power source since it isolates the source from the load when the load draws more current than the source can safely provide.

31. From the second complete paragraph on page 13 through the third complete paragraph on page 15, applicant alleges there is no motivation to combine the teachings of Cohen and Fujiwara. Examiner respectfully disagrees. Cohen discloses a method and device for providing power over telecommunications lines that necessarily requires connection of the power source to telecommunication lines. Fujiwara discloses that equipment connected to telecommunication lines is susceptible to damage from lightning strikes and commercial power bridges on the lines (paragraph 0004). One skilled in the art would have known that this susceptibility exists in power sourcing equipment as well as power loading equipment. As such, one skilled in the art would have been motivated to apply the protection methods taught by Fujiwara to the power source taught by Cohen.

32. Applicants remaining arguments are limited to dependences from claims discussed above and are unpersuasive for the same reasons.

Conclusion

33. Applicant's amendment necessitated any new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel Swerdlow whose telephone number is 571-272-7531. The examiner can normally be reached on Monday through Friday between 7:30 AM and 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sinh H. Tran can be reached on 571-272-7564. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Daniel Swerdlow
Primary Examiner
Art Unit 2615

ds
4 May 2006